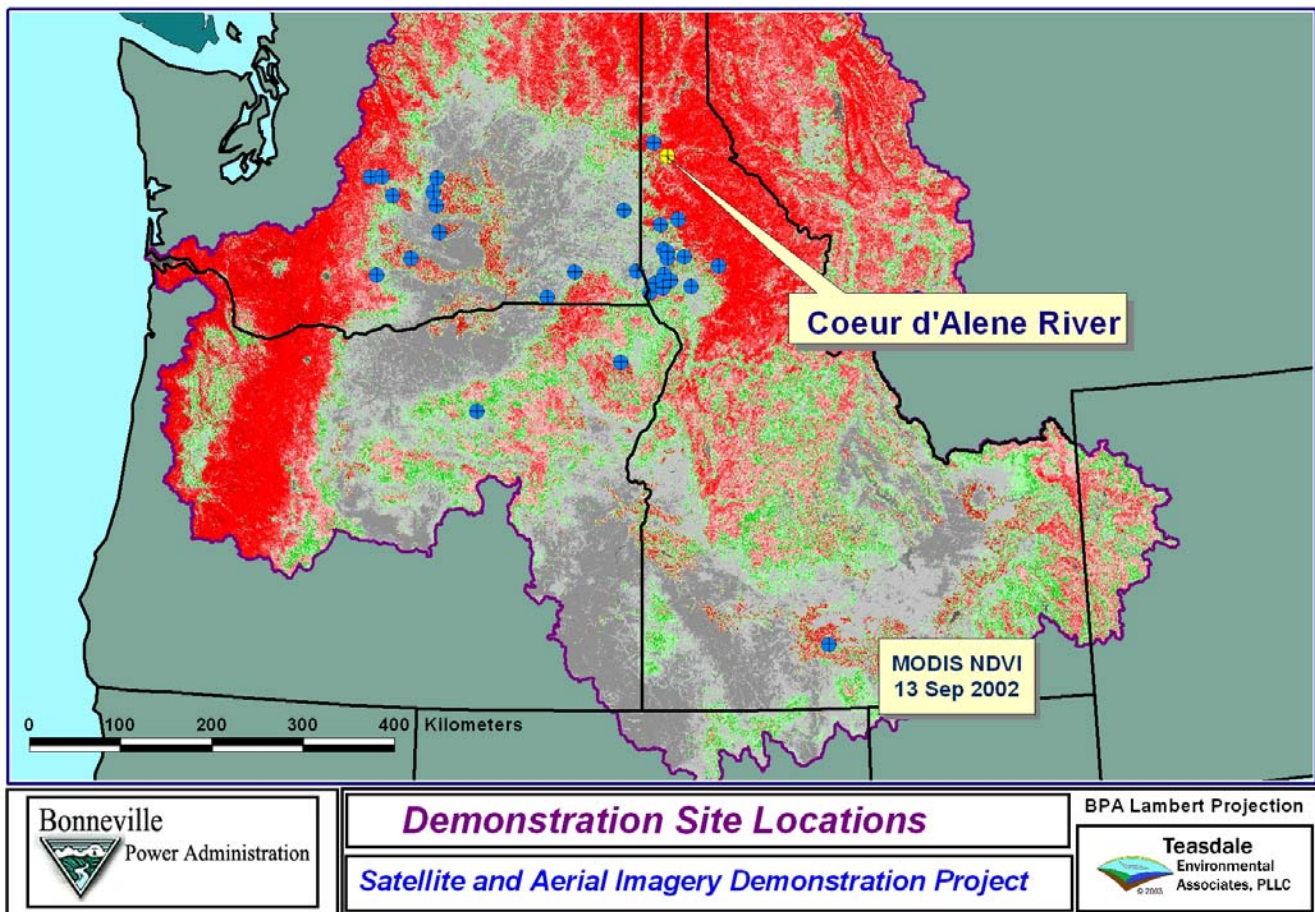


Coeur d'Alene River Demonstration Site

Location	Kootenai and Shoshone County, ID Coeur d'Alene Reservation
Water body	Coeur d'Alene River
Ecological Provenance	Intermountain
Subbasin Name	Coeur d'Alene
BPA Hydrologic Unit Code ID	2148
Hydrologic Unit Code, 6 th Level	170103030403
Watershed Name	Coeur d'Alene Lake, ID



Unique Characteristics

The low gradient lower Coeur d'Alene River flows through an extensive riverine wetland in the lacustrine plain of Lake Coeur d'Alene. The morphology of the Coeur d'Alene river is affected by sediment originating in historic mining operations in the Silver Valley near Kellogg and Wallace, ID. Depositional structures are evident in

satellite and aerial imagery at the mouth of the river. Side channel and flood plain lakes are shallow and support extensive stands of macrophytes.

Satellite imagery for this site includes Landsat 5, Landsat 7, and ASTER. Digital color infrared and digital color aerial imagery was acquired on June 20, 2002 and June 24, 2002. Ancillary data includes topographic DRG's, DOQ's, watershed boundaries and national land cover data. The natural color imagery shows an unusual color in the river water likely due to mineral constituents transported from the historic mining district.

Objective

The primary objective was examine the potential of using very high-resolution natural color and color infrared images to monitor the river channel, floodplain lakes and wetlands. Secondary objective were to compare the aerial imagery to Landsat and ASTER satellite images, look for evidence of changes near the floodplain in historic Landsat images.

Results

Wetlands and littoral vegetation were clearly evident in the natural color and color infrared digital aerial imagery. Some observers could distinguish species of macrophytes (Spatterdock) based on patch texture and color. The color infrared images appeared to show more differentiating detail than the true color images, but no field studies were conducted to determine the meaning of the differences in infrared reflectance. Some observers preferred the natural color imagery over color infrared imagery for initial characterization. The two imagery sets were complementary. The natural color imagery shows an unusual color of the river water likely due to mineral constituents transported from the historic mining district. Freshwater inflow from side channels could identified by water color difference.

The Landsat and ASTER imagery detected the macrophyte beds in the shallow floodplain lakes and partially inundated floodplain wetlands. The wetlands and macrophytes beds had a distinctly different reflectance and textural appearance than vegetation on surrounding upland terrain. Recently inundated fields were identified from a comparison of Landsat images from 1990 and 2002 showing potential for an evaluation of changes to the floodplain and wetlands over an extended period.